

## **REMARKS**

In response to the above-identified Office Action, Applicants amend the application and seek reconsideration thereof. In this response, Applicants amend Claims 1, 3, and 9. Applicants add Claim 18 and cancel Claim 14. Accordingly, Claims 1-13 and 15-18 are pending.

### **I. Claim Objections**

Applicants have corrected the typographical errors in Claim 3 as requested by the Examiner. Approval of the amendment to Claim 3 is respectfully requested.

### **II. Rejected Under 35 U.S.C. § 102**

Claims 1, 3-7, 9, 11-13 and 15 stand rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,493,577 issued to Choquette, et al. ("Choquette"). Applicants respectfully traverse the rejection.

To anticipate a claim, the Examiner must show that a single reference teaches each of the elements of that claim. Among other elements, amended claim 1 recites "the first semiconductor layer and the third semiconductor layer serve as confinement-conducting regions, and a layer including a tunnel junction is further formed in one of the confinement-conducting regions." Choquette at least does not teach this element.

Amended Claim 1 incorporates allowable Claim 14 to recite a layer including a tunnel junction further formed in one of the confinement-conducting regions. Choquette does not mention a tunnel junction. Thus, Choquette does not teach each of the elements of Claim 1.

Analogous discussion applies to amended Claim 9. Accordingly, reconsideration and withdrawal of the anticipation rejection of Claims 1 and 9 are requested.

Claims 3-7, 11-13 and 15 depend respectively from Claims 1 and 9 and incorporate the limitations thereof. Thus, at least for the reasons mentioned above in regard to Claims 1 and 9, Choquette does not anticipate these dependent claims. Accordingly, reconsideration and withdrawal of the anticipation rejection of Claims 3-7, 11-13 and 15 are requested.

Claims 2 and 10 are also rejected under 35 U.S.C. § 102(b) as being anticipated by or, in the alternative under 35 U.S.C. § 103(a) as being obvious over Choquette. Claims 2 and 10 depend respectively from Claims 1 and 9 and incorporate the limitation thereof. Thus, at least for the reasons mentioned above in regard to Claims 1 and 9, Choquette does not teach or suggest each of the elements of Claims 2 and 10. Accordingly, reconsideration and withdrawal of the rejection of Claims 2 and 10 are requested.

Applicants submit that new Claim 18 recites an InP semiconductor substrate, which is not taught or suggested by Choquette. Choquette at most discloses a GaAs substrate which operates in a 1000 nm (or 980 nm) wavelength region. By contrast, materials based on the InP substrate operate in a 1500 nm (or 1310nm) wavelength region. Thus, Claim 18 is patentably distinguishable from Choquette.

### **III. Allowable Subject Matter**

Claim 14 is cancelled. In regard to Claims 8, 16, and 17, the Examiner indicates that these claims recite allowable subject matter but are objected to as being dependent on Claims 1 and 9. Applicants respectfully submit that the amendment to Claims 1 and 9 has obviated the need to rewrite these dependent claims. Thus, Claims 8, 16, and 17 which depend from Claims 1 and 9 and incorporate the limitations thereof, are allowable at least for the reasons mentioned in regard to Claims 1 and 9. Accordingly, reconsideration and withdrawal of the objection of Claims 8, 16, and 17 are requested.

### CONCLUSION

In view of the foregoing, it is believed that all claims now pending, namely Claims 1-13 and 15-18, patentably define the subject invention over the prior art of record, and are in condition for allowance and such action is earnestly solicited at the earliest possible date. If the Examiner believes that a telephone conference would be useful in moving the application forward to allowance, the Examiner is encouraged to contact the undersigned at (310) 207 3800.

Respectfully submitted,

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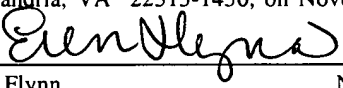
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I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Mail Stop Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on November 3, 2005.

  
Erin Flynn

November 3, 2005